#### Work Order ID 56768



Page 1

March 8, 2010 4:07:38 PM

**Required Date: 26/03/2010** 

Item ID:

D212-664-101

Accept



Setup Start



**Revision ID:** 

Item Name: **Start Date:** 

Crosstube Fwd

08/03/2010

Start Qty: 1.00 Req'd Qty: 1.00



Cust Item ID: **Customer:** 

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



Date:

**SPC (Y/N):** 

Date:

Stop

Stop

Sequence ID/ **Work Center ID**  Operation Description

Set Up/ **Run Hours** 

Draw Number

Draw Plan Rev. Code Accept Qty

Reject Reject Qty Number

Insp. Stamp

Draw Nbr

**Revision Nbr** 

D212-664-141

Rev D

100

Document Control

DOCUMENT CONTROL

Memo

0.00

0.00

Photocopy bluefile and create labels as per PPP D212-664-101 CHG003

110

Packaging

Pick Kit

Packaging

Memo

0.00

0.00

Packaging

120

CNC Bend 2

CNC Alpha 160 Bender

0.00

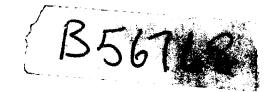
**BENDING MACHINE - CROSSTUBES** 

Memo

0.00

Bend tube as per Dwg D212-664-141 using CNC bender program 212-fw and

Folio FT015



Dart Aerospace	Ltd
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	•							** J.			
W/O:		WORK ORDER CHANGES									
DATE	STEP	PRO	Ву	Date Q	ty Approval Chief Eng / Prod Mgr	Approval QC Inspector					
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			,								
Part No		PAR #:	Fault Cate	lorv:	NCP: You	No DOA:	Doto				
1 411 140		olution:									
NCR:				ER NON-CONFORMA							
DATE	STEP	Description of NC	Description of NC Corrective Action			Verification	on Approval	Approval			
DAIL		Section A	Initial Chief Eng	Action Description Chief Eng	Sign 8 Date	Section C		QC Inspector			
1											

#### Work Order ID 56768

Page 2

March 8, 2010 4:07:38 PM

**Required Date: 26/03/2010** 

Item ID:

D212-664-101

Accept

Setup Start

Stop

**Revision ID:** 

Item Name: **Start Date:** 

Crosstube Fwd

08/03/2010 Start Qty: 1.00

Req'd Qty: 1.00



**Cust Item ID:** 

**Customer:** 

Reference:

Approvals:	Process Plan: Date:	Tooling:	Da	Date:		•	kun ou	1 10011101 10110 101 1401 1001	
	QC: Date:	SPC (Y/N):	Date:			Sto	р		
Sequence ID/ Work Center II	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Oty	Reject Otv	Reject Number	Insp. Stamp
130	QC15- Crosstube Dimensional Check	Jes 2 00.0	2/24						~ <b></b>

Quality Control

QC

140

Crosstubes

Crosstubes

Crosstubes

Memo

DT8549

0.00

0.00

0.00

Memo

1-Drill pilot holes in tube as per Dwg D212-664-141 using drill Jig DT8548 &

2-Ream hole to finish size in tube as per Dwg D212-664-141using drill Jig DT8548 & DT8549. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes.

3-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-141

4-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-141

W/O:		WORK ORDER CHANGES										
DATE	STEP	PRO	PROCEDURE CHANGE				Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector		
Part No				_ Fault Category: NCR: Yes No DQA: _								
			Dispositio	Disposition: QA: N/C Closed:					Date:			
NCR:			WORK ORD	ER NON-CONFORM	IANCE	(NCR	)					
DATE	STEP	Description of NC	Corrective Action   Secondary   Secondar		ction B	on B Sign &		cation	Approval	Approval		
		Section A	Chief Eng	Chief Eng		Date	Secti	on C	Chief Eng	QC Inspector		
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#### Work Order ID 56768

March 8, 2010 4:07:38 PM

**Required Date: 26/03/2010** 



Page 3

Item ID:

D212-664-101

Accept



Setup Start

Stop



**Revision ID:** 

Item Name: **Start Date:** 

Crosstube Fwd

08/03/2010

Start Otv: 1.00

Req'd Oty: 1.00



**Cust Item ID: Customer:** 

Draw

Number

Reference:

**Approvals:** 

Process Plan:

Date:

Date:

Tooling:

SPC (Y/N):

Date:

Date:

Draw

Rev.

Plan

Code

Run Start

Sequence ID/ **Work Center ID** 

150

HandFXtube

Hand Finishing Crosstubes

Operation Description

Crosstubes Chemical Conversion

Set Up/ **Run Hours** 

0.00

0.00 Memo Chemical Conversion Coat within 24 hours of bending and drilling

160

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

0.00

170 Outsource2

Outsource process - NDT

Outsource process - NDT per QSI038 4.1

0.00

0.00

Memo

Liquid Penetrant Inspection as per QSI 038

Issue P/O: 1/593 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order CZ 10/4/06 (1)

Stop

Reject

Insp. Number Stamp

Otv

Reject

Accept

Qty

W/O:		WORK ORDER CHANGES											
DATE	STEP	PR	OCEDURE CHA	NGE	E	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector			
	1												
					:								
Part No: PAR #: Fault Category: NO Resolution: Disposition: QA		NCR: Yes No DQA: Date:											
NCR:			WORK ORDI	ER NON-CONFORMA	ANCE (	NCR)	j						
DATE	STEP	Description of NC	Corrective Action Section B				Verific	eation	Approval	Approval			
DATE	SIEF	Section A	Initial Chief Eng	Action Description Chief Eng		ign & Date	Section C		Chief Eng	QC Inspector			
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#### Work Order ID 56768

March 8, 2010 4:07:38 PM

**Required Date: 26/03/2010** 



Page 4

Item ID:

D212-664-101

Accept



Setup Start



**Revision ID:** 

Item Name:

Crosstube Fwd

08/03/2010

Start Qty: 1.00

Req'd Qty: 1.00



**Cust Item ID: Customer:** 

Reference:

**Start Date:** 

**Approvals:** 

Process Plan:

Date:

Tooling:

Date:

Start

Run

Stop



Date: \_\_\_\_\_

SPC (Y/N):

Set Up/

**Run Hours** 

Date:

Stop

Sequence ID/ **Work Center ID** 

180

Packaging Packaging

Operation Description

Receive & Inspect for Damage & Mat'l Certs

Packaging

Memo

0.00

0.00

Ensure copy of NDT results attached to work order.

Draw Number

Draw Rev.

Plan Accept Code Qty

Reject Reject Qty Number

Insp. Stamp

190

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Inspect for damage & ensure results are as per Dwg D212-664-141

W/O:			WORK ORDER CHANGES								
DATE	STEP	PROCEDURE CHANGE				Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approva QC Inspector	
Part No	<b>:</b>	PAR #:	Fault Categ	ory:	NCR:	Yes I	No <b>DQ</b>	A:	Date:		
Resolution:											
NCR:			WORK ORDE	R NON-CONFORM	ANCE (	NCR	)				
DATE	STEP Description of Section A	Description of NC		Corrective Action Section		Section B		cation	Approval	Approval	
DATE		Section A	Initial Chief Eng	Action Description Chief Eng		Sign & Date		ion C	Chief Eng	QC Inspector	
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				,							

March 8, 2010 4:07:38 PM

**Required Date: 26/03/2010** 

Item ID:

D212-664-101

Accept

Setup Start

Stop



**Revision ID:** 

**Start Date:** 

Item Name:

Crosstube Fwd

08/03/2010

Start Qty: 1.00

Req'd Qty: 1.00



**Cust Item ID:** 

**Customer:** 

Draw

Number

Reference:

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7	սս	ıυ	v 4	13.

Process Plan:

Date:

Tooling:

Date:

Run Start



Date:\_\_\_\_

SPC (Y/N):

Set Up/

**Run Hours** 

Date:

Draw

Rev.

Plan

Code

Stop



Sequence ID/ **Work Center ID** 

200

SprayPaint

Spray Painting

Operation Description

Spray Painting per QSI005 4.2

SprayPaint

Memo

0.00

0.00

1-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube with White Imron as per QSI 005 4.2

PRIME:

Start Time: 8:30 Fininsh Time: 930

PAINT:

Start Time: 200 Finish Time: 3500

210

QC

Quality Control

QC14- Inspect Spray Paint

0.00

Memo

0.00

Then, Wrap in plastic bag to protect from scratches

ZT 10-04-07

Accept Qty

Reject

Reject Number

Insp. Stamp

Qty

10 04 07

								· · · · · · · · · · · · · · · · · · ·		
W/O:			WORK ORDER CHANGES							
DATE	STEP	PRO	NGE	Ву	Date Q	ty Approval Chief Eng / Prod Mgr	Approval QC Inspector			
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•										
Part No	:	PAR #:	Fault Cate	egory:	NCR: Yes	No DQA: _	Date: _			
Resolution:		esolution:	Disposition	n:	_ QA: N/C CI	osed:	Date: _			
NCR:			WORK ORD	ER NON-CONFORMA	NCE (NCP	R)				
DATE	STEP	Description of NC		Corrective Action Secti		Verification	on Approval	Approval		
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#### Work Order ID 56768

March 8, 2010 4:07:38 PM

**Required Date: 26/03/2010** 



Page 6

Item ID:

D212-664-101

Accept



Setup Start

Stop

Stop



**Revision ID:** 

Item Name: Start Date:

Crosstube Fwd

08/03/2010

Start Qty: 1.00

Req'd Oty: 1.00



**Cust Item ID: Customer:** 

Reference:

Process Plan: \_\_\_\_ Date: Tooling:

QC: \_\_\_\_ Date:

0.00

0.00

SPC (Y/N):

Date: Date:

Run Start

Sequence ID/ **Work Center ID** 

220

Crosstubes Crosstubes

Operation Description

Crosstubes

Set Up/ **Run Hours**  Draw Number

Draw Plan Rev. Code

Accept Qty

Reject Qty

Reject Number

Insp. Stamp

Memo

1- Lightly scuff the bonded area using a 320 grit sand paper and clean the area

with 41058 wash 'n' wipe

QC5- Inspect part completeness to step on W/O

2-Install supports with magnobond as per QSI 015 Adhere for for 12 Hrs 6398 Magnobond Batch: 110417 exp: 01/2011

230

240

OC

0.00

**Quality Control** 

Pick Kit

0.00

Packaging

Packaging

Memo

Memo

0.00

(10/4/8 ()

W/O:			WORK ORDER CHANGES								
DATE	STEP	PRO	OCEDURE CHA		Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector		
Part No	:	PAR #:	Fault Cate	gory:	NCR: Yes	No <b>DQ</b>	A:	Date:			
Resoluti		solution:	Disposition	n:	_ QA: N/C	Closed:		Date: _			
NCR:			WORK ORDI	ER NON-CONFORM	ANCE (NC	R)					
DATE	STEP	Description of NC		ion B	Verifi	cation	Approval	Approval			
	0.2.	Section A	Initial Chief Eng	Action Description Chief Eng	Sign Dat			Chief Eng	QC Inspector		
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#### Work Order ID 56768

March 8, 2010 4:07:38 PM



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Item ID:

D212-664-101

Accept



Run

Setup Start

Stop



**Revision ID:** 

Item Name: Crosstube Fwd

**Required Date: 26/03/2010** 

08/03/2010

Start Oty: 1.00

Req'd Qty: 1.00



**Cust Item ID: Customer:** 

Reference:

**Start Date:** 

Ap	prova	is:

Process Plan:

Date:

Tooling:

Date:

Start



QC: \_\_\_\_

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID

OC

Quality Control

Operation Description

OC4- 100% Inspect kits for completeness

Set Up/ **Run Hours**  Draw Number Draw Plan Rev. Code

Accept Qty

Reject Reject Qty Number

Insp. Stamp

Memo

0.00

0.00

260

Packaging Packaging

Packaging

Memo

Identify and pack for shipping as per PPP D212-664-101

270

QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

W/O:		WORK ORDER CHANGES										
DATE	STEP	PROCEDURE CHANGE				<b>y</b>	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector		
		PAR #:	Fault Cate	Fault Category: NCR: Yes No DQA:								
- a	Reso	olution:	Disposition	າ:	QA: N/	C Clo	sed:		Date: _			
NCR:			WORK ORDI	ER NON-CONFORM	ANCE (N	ICR)						
DATE	STEP	Description of NC					Approval	Approval				
	Section A		Initial Chief Eng	Action Description Chief Eng	on Sign & Date				Chief Eng	QC Inspector		
										f		

#### Picklist Print

March 8, 2010 4:07:44 PM

Work Order ID: 56768

Parent Item:

D212-664-101

Parent Item Name:

Crosstube Fwd

Comments:

IPP Rev:E□04.02.16□Reformat□KJ/DS

IPP Rev:F 06-03-29

Remove Coments on Pick List JLM

IPP Rev:G 07-04-30

As per Rev C

JLM

Page 1

Start Date: 08/03/2010

**Required Date: 26/03/2010** 

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/

Replacement Mfg/

Manufactured

No

Bin Primary

Last

Route 110

Unit of Each

Qty on 0.0000

Remaining 1.0000

Qty

3.56563

Date

Status

D212-664-101TRN

Crosstube Turning Detail

D3595-063-450

Manufactured

No

230

Each

107.6966 4.2105



RUBBER CUSHION

Warehouse	Loc Qty	Loc Code	
<b>Location</b>			
Main Warehouse			
LG	6.72767369		
52447	6.72767369		
Main Warehouse			
ST	100.9689		
38959	2		
43210	2.59		
46465	0.3789		
53775	96		

W/O:			WO	RK ORDER CHANG	350					<del> </del>
DATE	STEP	PRO	OCEDURE CHAN		JLO	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
			100				* ;		. Tod Mg	
								<u> </u>		
Part No		PAR #:	Fault Categ	ory:	NCR	: Yes I	lo DQ	<b>A</b> :	_ Date: _	
	Resc	olution:	on: Disposition: QA: N/C Closed:				Date:			
NCR:			WORK ORDE	R NON-CONFORM	ANCE	(NCR)				
DATE	STEP	Description of NC			ction B	0:	Verific	ation	Approval	Approval
		Section A	Initial Chief Eng	Action Description Chief Eng		Sign & Date	Section C	Chief Eng	QC Inspector	
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#### Picklist Print

March 8, 2010 4:07:44 PM

Page 2

Work Order ID: 56768

Parent Item:

D212-664-101

Parent Item Name:

Crosstube Fwd

Comments:

IPP Rev:E□04.02.16□Reformat□KJ/DS

IPP Rev:F 06-03-29

Remove Coments on Pick List JLM JLM

IPP Rev:G 07-04-30 As per Rev C

Start Date: 08/03/2010

**Required Date: 26/03/2010** 

Start Qty: 1.00

Required Oty: 1.00

Component Item ID/ MS21920-25

Replacement Mfg/

Purchased

Manufactured

Primary Bin No

Last Route 220

Unit of Each

Qty on 172.0000 4.0000

Remaining

Qty

Date

Status

Clamp(per MIL-DTL-8783C)

Warehouse Location	Lo	oc Oty	Loc Code		
Main Warehouse					
CA		25			
113744		25			
Main Warehouse					
ST		147			
108111		3			
108975		17			
109181		42			
109644		10			
113281		25			<del></del>
113282		50			
	220	Each	68.0000	2.0000	

D2893-1

2.75 Support

Warehouse Loc Qty Loc Code Location Main Warehouse

68

6

13

19

10

20

ST 25657 51775 53125

53340

53774

		<del></del>									
W/O:		WORK ORDER CHANGES									
DATE	STEP	PRO	OCEDURE CHAI	IGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector		
								<u></u>			
Part No	:	PAR #:	Fault Categ	jory:	_ NCR: Yes	No DQ	<b>A:</b>	_ Date: _			
	Res	solution:	Disposition	:	_ QA: N/C CI	osed:		Date: _			
NCR:			WORK ORDE	ER NON-CONFORMA	NCE (NCR	3)					
DATE	STEP	Description of NC		Corrective Action Secti		Verific	ation	Approval	Approval		
	J.L.	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Secti	on C	Chief Eng	QC Inspector		
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#### **Picklist Print**

March 8, 2010 4:07:44 PM

Work Order ID: 56768 Parent Item:

D212-664-101

Parent Item Name:

Component Item ID/

Comments:

Crosstube Fwd

IPP Rev:F 06-03-29

IPP Rev:E□04.02.16□Reformat□KJ/DS

Manufactured

Purchased

IPP Rev:G 07-04-30

Remove Coments on Pick List JLM

Bin

No

No

Primary

As per Rev C Replacement Mfg/

JLM

Last

Route 240

Unit of Each

Qty on 19.0000

Loc Code

Remaining 1.0000

Start Date: 08/03/2010

Start Qty: 1.00

Qty

Date Status

Required Date: 26/03/2010

Required Qty: 1.00

Page 3

Placard

D3428-1

Warehouse Loc Oty Location

Main Warehouse

ST096

55565

19

19

Each 56.0000 4.0000

[- fa/4/8 ()

AN6-35A

Warehouse Loc Otv Loc Code Location Main Warehouse ST 56

240

112314 6 112805 20 113422 30

M12805 M1/2806

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W/O:			WC	RK ORDER CHAN	GES					-2 .
DATE	STEP	PRO	OCEDURE CHA	NGE		Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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				- 1						
Part No	:	PAR #:	Fault Cate	gory:	NCF	R: Yes	No <b>DQ</b>	<b>A:</b>	Date: _	
	Res	solution:	Dispositio	າ:	QA:	N/C CId	sed:		Date: _	
NCR:			WORK ORDI	ER NON-CONFORM	IANCE	(NCR	)			
DATE	STEP	Description of NC			Verii			cation Approval	Approval	Approval
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#### Picklist Print

March 8, 2010 4:07:44 PM

Page 4

Work Order ID: 56768

D212-664-101



Parent Item: Parent Item Name:

Crosstube Fwd

Comments:

IPP Rev:E□04.02.16□Reformat□KJ/DS

IPP Rev:F 06-03-29

Remove Coments on Pick List JLM JLM

IPP Rev:G 07-04-30

As per Rev C



Required Date: 26/03/2010

Start Date: 08/03/2010

Required Qty: 1.00

Component Item ID/ AN6-36A

Replacement Mfg/

Purchased

Bin Primary No

Last

Route 240

Unit of Each

Qty on 87.0000

Remaining 4.0000

Qty

Date

-Status

Bolt

Warehouse	Lo	e Oty	Loc Code		
Location					
Main Warehouse					
ST		87			
109632		1			
110382		2			
112314		34			M
113121		50			-
	240	Each	364,0000	6.0000	

MS21042L6

Purchased

No

U/4/8 ()

Nut

Warehouse	Loc Oty	Loc Code	
<b>Location</b>			
Main Warehouse			
ST	364		
105077	22	`	
110002	5		
111578	337		M1/1578

W/O:	· · ·		wc	ORK ORDER CHANG	FS			. , ,		7
DATE	STEP	PRO	OCEDURE CHA		Ву		Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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										77.
Part No	:	PAR #:	Fault Cate	gory:	NCR: Ye	es No	DQ/	A:	Date:	
	Re	esolution:	Disposition	າ:	_ QA: N/C	Clos	ed:		Date: _	
NCR:			WORK ORDI	R NON-CONFORM	ANCE (N	CR)				
DATE	STEP	Description of NC	Corrective Action Section B			Sign & Verifica			Approval	
	J	Section A	Initial Chief Eng	Action Description  Chief Eng		n & ate	Section C		Chief Eng	QC Inspector
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#### Picklist Print

March 8, 2010 4:07:44 PM

Page 5

Work Order ID: 56768

Parent Item:

D212-664-101

Parent Item Name:

Crosstube Fwd

Comments:

IPP Rev:E□04.02.16□Reformat□KJ/DS

IPP Rev:F 06-03-29

Remove Coments on Pick List JLM

IPP Rev:G 07-04-30

As per Rev C

JLM

Last

Start Date: 08/03/2010

Required Date: 26/03/2010

Start Qty: 1.00

Required Qty: 1.00

Date

Component Item ID/ AN960JD616

Replacement Mfg/

Purchased

Bin Primary No

Route 240

Unit of Each

Qty on , Remaining, 313.0000 18.0000

Qty

Washer

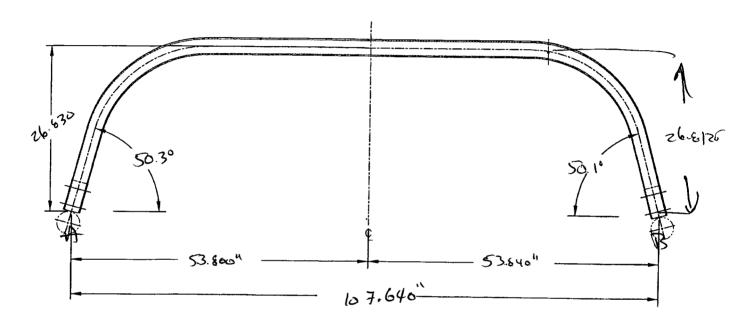
Warehouse	Loc Qty	Loc Code	
<u>Location</u>			
Main Warehouse			
ST	313		
112314	3		
112828	10		<del> </del>
113149	300		M1/2/4

Dart	<b>Aeros</b>	pace	Ltd
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	•									
W/O:	WORK ORDER CHANGES									
DATE	STEP	PRO	OCEDURE CHA	NGE	В	у	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
Part No	•	PAR #:	Fault Cate	gory:	NCR: \	es N	lo <b>DQ</b>	<b>A</b> :	Date:	
	Res	solution:	Disposition: QA: N/C Closed: Date				Date: _			
NCR:			WORK ORDI	ER NON-CONFORM	IANCE (N	ICR)				
DATE	STEP	Description of NC			ction B		Verific	ation	Approval	Approval
- DAIL	JILI	Section A	Initial Chief Eng	Action Description Chief Eng		gn & Date	Section C	Chief Eng	QC Inspector	
				10-14-0-1-1		35-VIII.				
						···-	-			

Work Order:	34748
Part Number:	D212-664-101
	Page 1 of 1
-	

Required Dimension	Min	Max
Height	26.79	27.05
1/2 Span	53.59	53.85
Angle	49	52
Total Span	107.18	107.7



	Comments	
QC15 Inspection Date	8	

Rev	Date	Change	Revised by	Approved
Α	07.02.06	New Issue	KJ/JM	1
В	07.05.31	Dimensions updated per Dwg Rev C	KJ/JM X	ha
				- / <del>-</del>

W/O:			14/6	DI ODDED OUANO						<u>.</u>
W/O:	1 .		WC	RK ORDER CHANG	iES					# we ;
DATE	STEP	PROCEDURE CHANGE			-	Ву	Date	Qty   Chief	Approval Chief Eng / Prod Mgr	Approval QC Inspector
**			**							
			<b></b>							
Part No	:	PAR #:		gory:		R: Yes	No <b>DQ</b>	A:	Date:	
			Disposition:			QA: N/C Closed:				
NCR:		\	WORK ORDI	R NON-CONFORM	ANCE	(NCR	)			
DATE	STEP	Description of NC			Section B		Verific	cation	Approval	Approval
DAIL	JILF	Section A	Initial Chief Eng	Action Description Chief Eng		Sign & Date		on C	Chief Eng	QC Inspector
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Item	Qty -141	Qty -141B	Part Number	Description
1	Х		D212-664-141	CROSSTUBE ASSEMBLY (205/212/412 HIGH FWD)
2		X	D212-664-141B	CROSSTUBE ASSEMBLY (214 HIGH FWD)
3	1	1	D6005-128	CROSSTUBE
4	2	2	D2893-1	SUPPORT
5	4	4	D3595-063-450	RUBBER CUSHION
6	4	4	MS21920-25	CLAMP (OR MS21920-26)
7	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

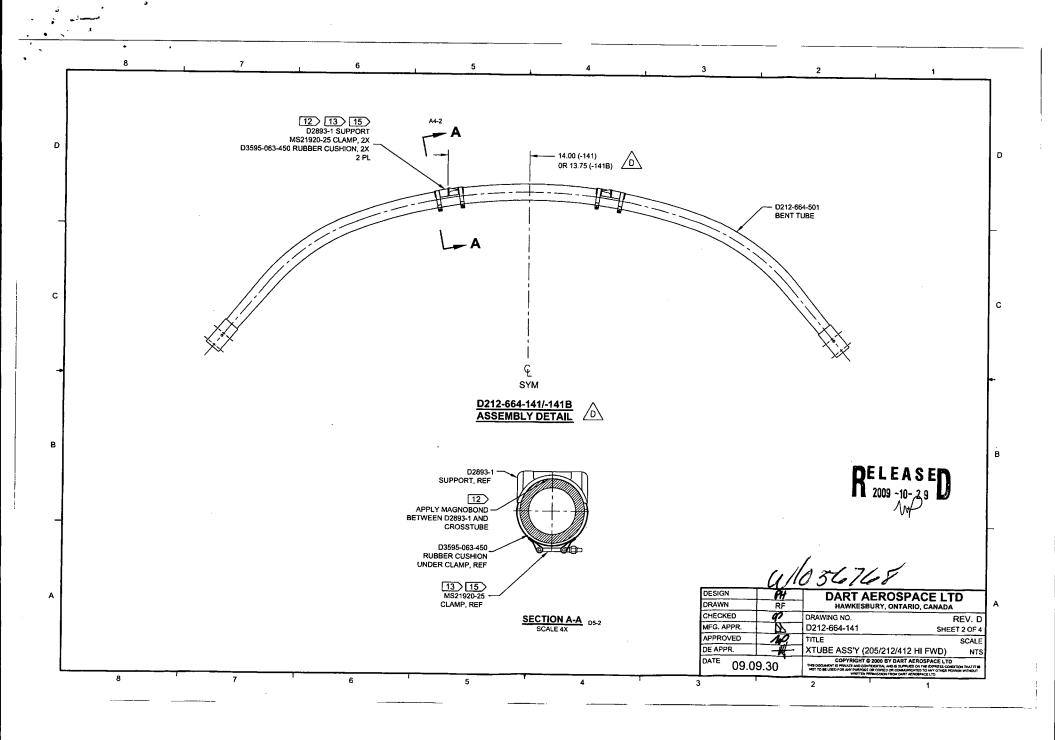
#### **GENERAL NOTES:**

- 1) MATERIAL: MANUFACTURED FROM D6005-128 FINISHED LENGTH = 126.514±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2 PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 Max.
  IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS
- 7) WEIGHT: D212-664-141 = 33.6 lbs (PER IIN-D212-664) D212-664-141B = 33.6 lbs (PER IIN-D212-664)
- PART IS SYMMETRIC ABOUT CENTERLINE.
- RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2893-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2893-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-25 CLAMPS (OR -26) WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE D2893-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

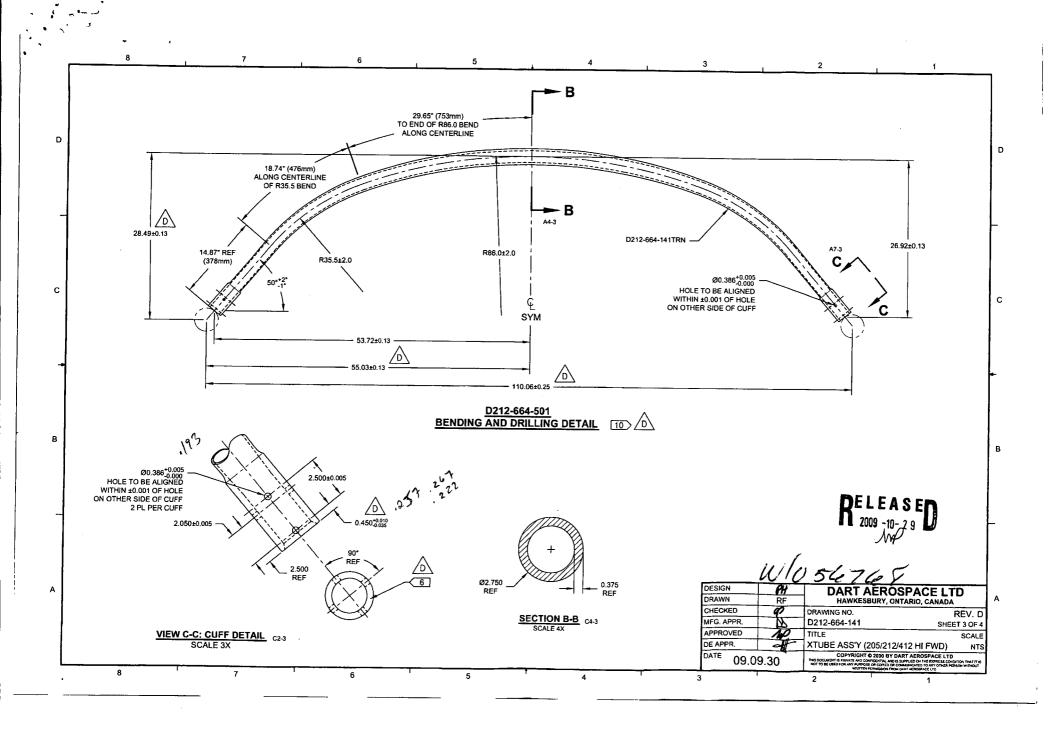
SHOP COPY RETURN TO ENGINEERING UNCONTROLLED COPY SUBJECT TO AMENDMENT WITHOUT NOTICE

D	REFORMAT/REVISE GENERAL NOTES/PART LIST; REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -1418 (ZN B4-2, D4-2); REMOVED REF & ADD TOLERANCES (ZN B4-3, C6-3, C6-3 & 8 B6-3); ROVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4  PEMOVE REF ADD ACION CONTROL ADD MARCHES						
С			SION STRIP; ADD MAGNOBOND VERSE CLAMPS	PH	07.03.08		
В	ADD H SKIDTI		OMPATABILITY WITH BHT/AA	PH	05.02.04		
Α	NEW IS	SSUE	PH	00.12.12			
REV.			DESCRIPTION BY DATE				
DESIGN		PH	DART AEROSPA	ACF	TD		
DRAWN		RF	HAWKESBURY, ONTARI	O, CANA	ADA		
CHECKE	D	9	DRAWING NO.		REV. D		
MFG, AF	PR.	77	D212-664-141	5	SHEET 1 OF 4		
APPRO\	/ED	10	TITLE		SCALE		
DE APP	۲.		XTUBE ASS'Y (205/212/412)	HI FWI	D) NTS		
DATE	09.0	9.30	COPYRIGHT © 2000 BY DART AE THE DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED NOT TO BE USED FOR ANY PURPLIED OR COME/DID OR COME/DID WEIGHTEN PERMISSION PRIOR DAYS ARE	OH THE EXPRE	ST CONDITION THAT IT IS		

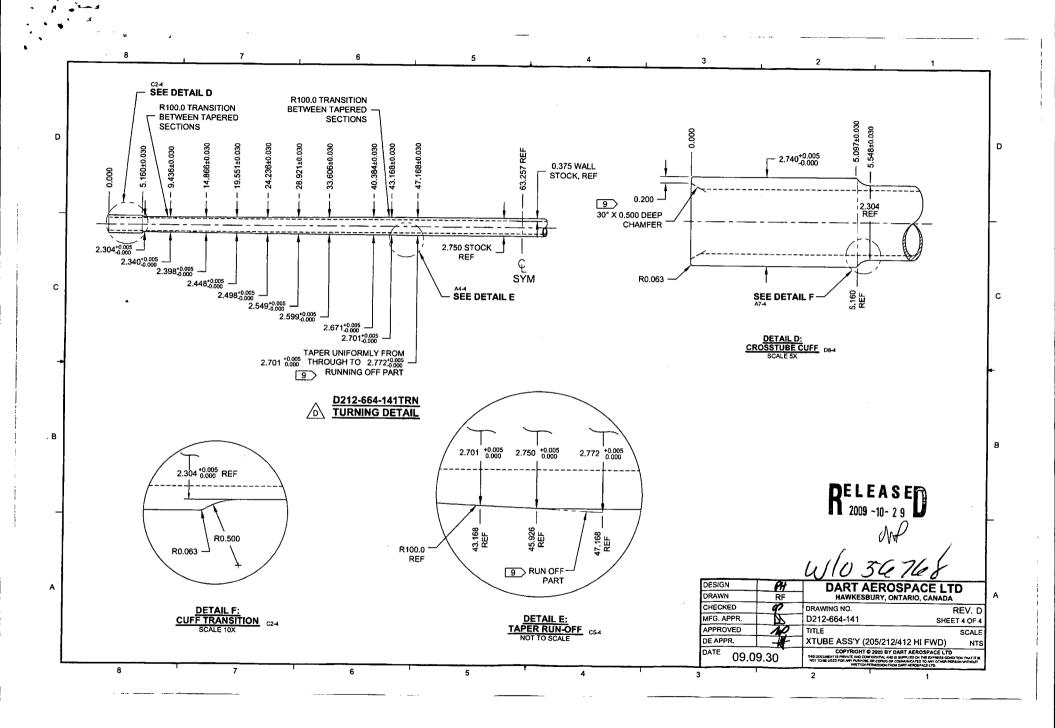
W/O:			WC	RK ORDER CHANG	SES				
DATE	STEP	PRO	PROCEDURE CHANGE					Approval Chief Eng / Prod Mgr	Approval QC Inspector
Part No: PAR #: Fault Category: NCR: Yes No  Resolution: Disposition: QA: N/C Closed  NCR: WORK ORDER NON-CONFORMANCE (NCR)			, 100 Mg.						
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DATE	STEP	Description of NC				cation	Approval	Approval	
		Section A				Section C		Chief Eng	QC Inspector
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Resolution:			Disposition	_ QA: N/C	Closed:	Date:			
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DATE	STEP	Description of NC	Corrective Action Section B			Verifi	cation	ation Approval	Approval
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DATE	STEP	Description of NC	Corrective Action Section			Verific	ation	Approval	Approval		
DAIL	JILF	Section A	Initial Chief Eng	Action Description Chief Eng	Sign Date	& Secti		Chief Eng	QC Inspector		
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<b>Dart Aerospace Lt</b>
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W/O:			W	ORK ORDER CHANG	GES					tare a
DATE	STEP	PRO	PROCEDURE CHANGE By					Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
WORK ORDER CHANGE  DATE   STEP   PROCEDURE CHANGE   By   Date										
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Part No										
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DATE	STEP							ation	Approval	Approval
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#### 5.0 PARTS LIST



#### **HIGH GEAR CROSSTUBES**

Item	(-101)	-201	-203	Part Number	Description
	х			D212-664-101	CROSSTUBE INSTALLATION, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH FWD
		х		D212-664-201	CROSSTUBE INSTALLATION, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH AFT
			Х	D412-664-203	CROSSTUBE INSTALLATION, 412 HIGH AFT
	14				
1	1			D212-664-141	CROSSTUBE ASSEMBLY, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K, HIGH FWD
2		1		D212-664-241	CROSSTUBE ASSEMBLY, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH AFT
3.			1	D412-664-243	CROSSTUBE ASSEMBLY, 412 HIGH AFT
10	2			* D2893-1	SUPPORT
11	4			* D3595-063-450	RUBBER CUSHION
12	4	and the same of the same of the		* MS21920-25	CLAMP (OR MS21042-26)
- 13	1 4			AN6-35A	BOLT
14	4	•		AN6-36A ',	BOLT
15	. 6			MS21042L6 '	NUT (OR MS21042-6)
16_	18		-	AN960JD616 /	WASHER
20		2		* D2940-1	SUPPORT
21	<del>  </del>	4		* D3595-063-530	RUBBER CUSHION
22	<del>                                     </del>	4		* MS21920-28	CLAMP (OR MS21042-30)
23	<del>                                     </del>	4		AN6-40A	BOLT
24	<del> </del>	2	<del></del>	AN6-41A	BOLT
25	<del>   </del>	6		MS21042L6	NUT (OR MS21042-6)
26		18		AN960JD616	WASHER
	† <u>1</u>				
30			1	* D2896-1	SUPPORT
31			2	* D2856-600-1009	ABRASION STRIP
32			2	* D3595-063-570	RUBBER CUSHION
33	<u> </u>		4	* MS21920-28	CLAMP
34			2	* MS21920-30	CLAMP (OR MS21042-32)
35			4	AN6-40A	BOLT
36			2	AN6-41A	BOLT
37	11		6	MS21042L6	NUT (OR MS21042-6)
38	1		. 18	AN960JD616	WASHER
39			2	* D3189-1	CHAFING SHIELD
50	1	1		D3428-1	PLACARD
J		3 i	١ ،	ו־טארטים ן	LENONIC

<sup>\*</sup>REFERENCE ONLY. PARTS ARE INCLUDED IN D212-664-141/-241 OR D412-664-243 ASSEMBLIES ABOVE NOTE: KITS INCLUDE EXTRA HARDWARE FOR COMPATIBILITY WITH BOTH DART AND BELL/AA SKIDTUBES.

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W/O:			WO	RK ORDER CHAN	GES			V III	1
DATE STEP		PROCEDURE CHANGE				Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No		PAR #:							
	R	esolution:	Disposition	:	QA: N/C CI	osed:	<del></del>	Date:	
NCR:		,	WORK ORDE	R NON-CONFORM	IANCE (NCF	R)			
DATE	STEP	Description of NC	Initial	ction B	Sign & Verificat			Approval	
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# LIQUID PENETRANT TEST REPORT

P- 15321

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CLIENT	AT AEN STACE	D	ATE A	EK 6-20,10	TIME A	AM @ PM D
ATTENTION 4	-INDA /CHANTEL		, · <del></del>	188-10		
	a AREADEEN ST.		O/WO No.			
ADDRESS 127	ES RUPY ON KOH	11 / 100	VORK LOCATION	MAW - HA	wkes B	EURT
11400 K	E) Out / Ope " Port ?	<del>, , ,</del>		45 TM 1417		
PROJECT	F.P.F.		-8055 Tu			
ITEM(S) EXAMINED	47	Pes				
TTEM(O) ESONAMINES						
JOB DESCRIPTION	PROCEDURE NO. LT-000,2R	REV./DATE	TECH	INIQUE NO. LT-164	2. Rev./Date	
Part No.			MATERIAL ALCDINE	Acuminum T	HICKNESS	
SCOPE &	VET FLOURES	CENT	LIQUID	FENETHAN7	<i></i>	
ENSFEC	TION CAPPIED OU	7 10	0% Ex 7	ELNAL		
TEST DETAILS						
METHOD	FLUORESCENT		WATER WASH	☐ SOLVENT RE		POST EMULSIFIED
	NA FLUX  MINIMUM DWELL TIME 4510	Min. L	BLACK LIGHT S/N /6	459 □ OUTPUT > 10 ASHLIGHT □ TROUBLELI	OU μ VV/CM OUTPI	☐ AMBIENT < 2 fc UT>100 fc @ SURFACE
PENETRANT 2 (	20 MINIMUM DRY TIME >10		OTHER LAS	ino		
DEVELOPER SKI)	52 MINIMUM DWELL TIME 10		LIGHT METER S/N	1098866	CAL DUE	DATE 7 - 7010
	NON AQUEOUS 🔲 AQUEOUS 🔲	DRY			NOTT.	, / - /- 010
TEST SURFACE SURFACE CONDITION	As GROUND AS WELDED	9		SHOT BLASTED		LEAN BARE METAL
SURFACE TEMPERATURE		o 10°C/50°F	[3	<b>1</b> 10°C/50°F ⊤0 52°C/12	25°F □ >	52°C/125°F
RESULTS- (	METRIC   IMPERIAL)					
1 00 10	= -WO. 56769 V	/.				
1 Closs 7418	= -W.O. 36767					
1 00.001 3	=-W.O. 56768					
1 Clo>> 14 D	=-W.O. 50700					
1 CPACET R	E-W.O. 57025					
F 45032 1000	20.0.00					
1 100055 70	3E-W.O. 57024 1					
100000		,				
						·
Scope of Services	perform services extends only to those services provided for	in writing Under	no circumstances shall such se	rvices extend beyond the performa	nce of the requested s	services. It is expressly underst
that all descriptions, comments and exp	essions of opinion reflect the opinions or observations of Ac- Secondar, is not assuming any responsibilities of the owner?	curen Group Inc. be Jonerator and the o	used on information and assum wher/operator retains complets	ptions supplied by the ownerropera e responsibility for the engineering.	manufacture, repair	tien nor can include construction
data or other information provided by A	curen Group Inc. In no event shall Acuren Group Inc.'s liab	oility in respect of t	he services referred to herein c	ксеей те атоши раш зог ѕиси ѕег	wes.	
In performing the services provided, Act implied, is made or intended by Acuren	aren Group Inc. uses the degree, care and skill ordinarily exe Group Inc.	creised under simil	ar circumstances by others per	forming such services in the same a	or similar locality. N	o otner warranty, expressed or
SIGNATURES			1 1 1	/		
CLIENT REPRESENTATIVE	MAHLEW MUZDOUH	Math	- MUNDON	DTF	₹# 厚;	27374
TECHNICIAÑ (SIGNATURE):	PRINT		SIGNATURE	REPORT		
	11/5 - (4)0/1.	<u> </u>		REVIEWED BY		INITIALS
NAME (PRINT):	1st TECHNICIAN		2 <sup>nd</sup> TECHNICIAN		NAME	INITIALS
,	CGSB LEVEL SNT LEVEL	CGSB LEV		EL		
	CGSB REG. NO 6066	_ CGSB RE	3. NO			



# LIQUID PENETRANT TEST REPORT

P- 15321

ACORLIN						
	1 0			10 0	PAGE	OF /
CLIENT	DAT AEWSTACE	<u></u>	DATE	Alen 6-20,10	TIME	AM 📴 PM 🔾
ATTENTION	LINDA / CHAN	7=4	ACUREN JOB NO.	188-10		
ADDRESS 12	70 ASELVEEN	·	PO/WO No.	[71593]		
14 Ac.	SKES BURY ON A	112 12 11 110	WORK LOCATION	UAW - He	4, 15	RO
				ASTA 141		
PROJECT	EPI		CE255 7		/ KEV./DA	IE
ITEM(S) EXAMINED		4Pcs		<u> </u>		
JOB DESCRIPTION	PROCEDURE NO. LT	Γ£τωΩ Rev./Date		TECHNIQUE NO. LT-(GJ)	2 REV/DA	TC
Part No.				NE Juninum	·	1
SCOPE	WET FLOW, ?	255 CENT	TALENAL / COU	DE SUETA OUR	THICKNESS _	
In Site	ction CARZIE	) 00 T 10	21 8 E-1	TELLICITION TO THE	<del></del>	
TEST DETAILS		<u> </u>	073 27	recourse		
METHOD	FLUORESCENT	☐ VISIBLE	WATER WASH	☐ SOLVENT R	EMOVA DUE	D Door Family
	5NA FLUX			16459 OUTPUT > 1	000 u W/cm²	☐ POST EMULSIFIE
	MINIMUM DWELL TIME	E 4510 MIN.	LIGHTING EQUIP.	☐ FLASHLIGHT ☐ TROUBLEL	GHT 🚨 OUT	PUT>100 fc @ SURFAC
DEVELOPER SK!	MINIMUM DRY TIME  S-2 MINIMUM DWELL TIME			48 w 0 1098866		
	NON AQUEOUS AQUEOUS	☐ DRY	LIGHT METER S/N	1078866	CAL DU	EDATE 7 - 2010
TEST SURFACE					700	3 7 70 10
SURFACE CONDITION SURFACE TEMPERATURE		WELDED [	MACHINED	SHOT BLASTED	3 (	CLEAN BARE METAL
	METRIC   IMPERIAL)	C/ 20°F to 10°C/50°F		<b>☑</b> 10°C/50°F TO 52°C/1	25°F □ >	• 52°C/125°F
1 Cless 74 8	E-W.C. 56769 E-W.C. 56768 BE-W.C. 57024		F		<b>3</b> 71	
Scope of Services				10-09-01		
representations or warranties. Acuren of data or other information provided by A Standard of Care	perform services extends only to those services p ressions of opinion reflect the opinions or observe fromp the, is not assuming any responsibilities of ecuren Group Inc. In no event shall Acuren Group aren Group Inc. uses the degree, care and skill or Group Inc.	the owner/operator and the own p Inc.'s liability in respect of the	va on injurmazion una uss ner/operator retains comp services referred to herci	aurphons supplied by the owner/operatolete responsibility for the engineering, in exceed the amount paid for such servi	or and are not intene nanufacture, repair ces.	ded nor can they be construed a and use decisions as a result of
SIGNATURES			<u>, , , , , , , , , , , , , , , , , , , </u>		William Day on the Control of the Co	
CLIENT REPRESENTATIVE	MAHRIN PLAN	ti inath	- Artigara	DTR	# 5 -	27374
TECHNICIAN (SIGNATURE):	PRINT		SIGNATURE	REPORT	<del></del>	
NAME (PRINT):	MLE Just 57			REVIEWED BY:		
· · · · · · · · · · · · · · · · · · ·	1' TECHNICIAN	<i></i>	2 TECHNICIAN		NAME	INITIALS
	CGSB LEVEL SNT LEVEL CGSB REG. NO CCC		L SNT LE	VEL		